REMARKS

In accordance with the foregoing, the specification and claim 1, 14, 15, and 17 are amended. Claims 21-28 are added. No new matter is added. Claims 2, 4, 5, 10 and 11 remain cancelled. Claims 1, 3, 6-9, 12-28 are pending and under consideration.

CLAIM REJECTIONS UNDER 35 USC §103

Claims 1, 3, 9, 12-17 are rejected under 35 USC §103(a) as being unpatentable over the non-patent publication "All-optical fiber signal processing and regeneration for soliton communications", Bigo 10/97 (hereinafter "Bigo") with reference to U.S. Patent No. 5,323,260 Alfano et al. ("Alfano"), the non-patent publication "Optical Networks: A Practical Perspective" by Ramaswami et al. ("Ramaswami"), the non-patent publication "All-optical clock recovery using a mode-locked laser" by Smith et al. ("Smith"), and the non-patent publication "All optical clock recovery at bit rates up to 40 Gbit/s" by Ellis et al. ("Ellis").

Independent claims 1, 14, 15, and 17 are amended herewith to clarify that "said continuous wave having said wavelength λ_c is inputted from said optical loop, and generates amplitude modulated CW light having said wavelength λ_c and including a component of said frequency f_s by performing amplitude modulation of said continuous wave based on ~~by~~ four-wave mixing between the signal light and the continuous wave generated by the laser oscillation using said signal light as pump light." The claim amendments are fully supported by the originally filed specification, for example, page 10, lines 2-14. No new matter is added.

At the bottom of page 4 of the outstanding Office Action and continuing on page 5, the following paragraph is underlined:

> Moreover, notice that this FWM would occur between the optical signals input into the intracavity modulator, i.e., "the signal light" (Bigo 10/97, the input signal light in Fig. 9 of wavelength λ_s, p. 1215, col 1, 2nd paragraph) and "the continuous wave generated by the laser oscillation" (Bigo 10/97, λ_c in FIG. 9). The resultant generated "amplitude modulated CW light" would have said wavelength λ_c and include a component of said frequency f_s (Bigo 10/97, Fig. 9, note that the modulated output light of wavelength λ_c has the same 20 Gb/s/20 GHz frequency component as the input signal light).

However, Bigo's resultant generated "amplitude modulated CW light" is not generated based on four-wave mixing between the signal light and the continuous wave generated by laser oscillation. Further Bigo's Kerr fiber modulation does not anticipate or render obvious generating amplitude-modulated CW light having said wavelength λ_c and including a component of said

frequency f_s based on four-wave mixing between signal light and the continuous wave generated by the laser oscillation using said signal light as pump light.

Alfano discloses degenerate four-wave mixing (DFWM) which results in amplification of the probe pulses in col. 4, line 67 to col. 5, line 17. However, Alfano does not teach or suggest generating amplitude modulated CW light having the same wavelength as the wavelength of the continuous wave generated by the laser oscillation based on four-wave mixing between the signal light and the continuous wave generated by the laser oscillation, as recited in amended claim 1.

Ramaswami discloses four-wave mixing (FWM) in p. 72, 2nd full paragraph. However, Ramaswami fails to disclose generating amplitude modulated CW light having the same wavelength as the wavelength of the continuous wave generated by the laser oscillation based on four-wave mixing between the signal light and the continuous wave generated by laser oscillation.

The other cited references, Smith and Ellis do not cure the above-identified failure to teach all the features of the independent claims as amended.

In view of the above discussion, amended independent claim 1 and claims 3, 6-9, 12, 18-21 and 25 depending directly or indirectly from claim 1, patentably distinguish over the cited prior art at least because the prior art does not anticipate:

> wherein said nonlinear optical medium includes a second optical fiber to which said signal light of said input port is inputted from said optical loop, and said continuous wave having said wavelength λ_c is inputted from said optical loop, and generates amplitude modulated CW light having said wavelength λ_c and including a component of said frequency f_s by performing amplitude modulation of said continuous wave based on four-wave mixing between the signal light and the continuous wave generated by the laser oscillation using said signal light as pump light

as recited in claim 1.

Independent claim 14 and claims 22 and 26 depending directly or indirectly from claim 14, patentably distinguish over the cited prior art at least because the prior art does not anticipate:

> wherein said nonlinear optical medium includes a second optical fiber to which said signal light of said input port is inputted from said optical loop, and said continuous wave having said wavelength λ_c is input from said optical loop, and generates amplitude modulated CW light having said wavelength λ_c and

including a component of said frequency f_s by performing amplitude modulation of said continuous wave based on four-wave mixing between the signal light and the continuous wave generated by the laser oscillation using said signal light as pump light

as recited in claim 14.

Independent claim 15 and claims 16, 23 and 27 depending directly or indirectly from claim 15, patentably distinguish over the cited prior art at least because the prior art does not anticipate:

> wherein said nonlinear optical medium includes a second optical fiber to which said signal light of said input port is inputted from said optical loop, and said continuous wave having said wavelength λ_c is inputted from said optical loop, and generates amplitude modulated CW light having said wavelength λ_c and including a component of said frequency f_s by performing amplitude modulation of said continuous wave based on four-wave mixing between the signal light and the continuous wave generated by the laser oscillation using said signal light as pump light

as recited in claim 15.

Independent claim 17 and claims 24 and 28 depending directly or indirectly from claim 17, patentably distinguish over the cited prior art at least because the prior art does not anticipate:

> wherein said step (d) generates amplitude modulated CW light having said wavelength λ_c and including a component of said frequency f_s by performing amplitude modulation of said continuous was based on four wave mixing between the signal light and the continuous wave generated by the laser oscillation using said signal as pump light

as recited in claim 17.

NEW CLAIMS

The new claims 21-28 recite new similar features relative to the independent claims 1, 14, 15, and 17 respectively. The newly recited features are fully supported by the originally filed specification, for example, page 11, line 14 to page 17 , line 21. No new matter is added. The cited prior art references do not teach or suggest similar features.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: Jan. 16, 2008

By: _____

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